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## **Internet Self-Efficacy and the Use of Electronic Information Services Acceptance among University Students**

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### **Abstract**

Self-efficacy and the use of electronic information services acceptance among the university students can affect the learners' online services. This is due to the learners' acceptance of using technology and its role in their life. Therefore, the complexity of online and offline services needs to be examined by the experts to assess the learners' satisfaction which helps them to achieve electronic services. Learners' self-efficacy management can be evaluated as an important issue in the present study. The present study aims at investigating the survey of the relationship between the internet self-efficacy and using the electronic information services among the university students of Dezful Islamic Azad University, Khuzestan, Iran. The present study was conducted through descriptive-analytical method and took a correlational approach. The study sample included 387 students. Smart Partial Least Squares (PLS) was applied to investigate the study conceptual model. The results indicated that the use of the internet among the university students significantly affected the electronic services application ( $\beta = 0.182$ ). The same significant effects were also found in the variables including web specific self-efficacy on the acceptability of use ( $\beta = 0.285$ ), perceived control on electronic services application ( $\beta = 0.142$ ), perceived control on the acceptability of use ( $\beta = 0.139$ ), interpersonal norms on the acceptability of use ( $\beta = 0.376$ ), attitudes on the acceptability of use ( $\beta = 0.169$ ), perceived usefulness on attitudes ( $\beta = 0.224$ ), perceived amusement on the attitudes ( $\beta = 0.335$ ), perceived risk on the attitude ( $\beta = 0.187$ ), and internet self-efficacy on the web-specific self-efficacy ( $\beta = 0.672$ ). However, it was also made clear that the effects of web-specific self-efficacy on the electronic services application ( $\beta = 0.033$ ), social norms on the acceptability of use ( $\beta = 0.061$ ), internet self-efficacy on attitudes ( $\beta = 0.079$ ) and social norms on attitudes ( $\beta = 0.026$ ) are not statistically significant. The universities can prepare and compile appropriate training programs to take effective steps in the acceptability of the internet use that is in line with making students more informed and aware of the electronic services.

**Keywords:** Electronic Information Services, Internet Self-efficacy, Islamic Azad University of Dezful, Perceived Risk, Perceived Usefulness.

### Introduction

With the use of the technological innovations in the institutes of service-oriented organizations, there is a huge change in form, speed and the way that the services undergo considerable effects. Libraries and the information centers such as organizations offering diverse information services are no exception and they, as well, are bearing witness to the ubiquity of the modern technologies in their work-related and professional processes. This issue has extended so massively at present that a substantial part of the activities is carried out via technological means (Uwaifo, 2008). The electronic services offered by the university libraries enable the information sources integration and provide the users with the ability to search information on virtual Web-spaces. However, the role of information in electronic environment (Shim, Eastlick, Lotz & Warrington, 2001) and the nature of user experience in electronic environment largely differ from the process of searching information in the shelves and written archives (Nazari, Khosravi & Babolhavaeji, 2013). Technological innovations have swiftly influenced the entire functions, operations, processes, infrastructures and library services (Ramzan & Singh, 2010). On the other hand, the way that the individuals as electronic service users is subject to severe changes towards the tendencies, motivations, attitudes, norms and so forth. A wide spectrum of these changes shape the way the users behave when making use of the electronic services like the internet in the university libraries.

The use of internet as well as its later coming effects on the jobs can take effects from the users' self-efficacy upon using the internet (Bandura, 1997). Despite the advantages that the use of information technology has in education, some researchers (e.g., Nazari, Khosravi & Babolhavaeji, 2013) have found problems in using information technology from individual, organizational, cultural, and social perspectives. Self-efficacy theory is based on the assumption that the individuals' beliefs of their abilities and talents have favorable effects on their actions and that it is the most important determiner of the behavior. The results obtained in the studies conducted by Haghighi Nasab, Ghasemi, Torkman and Ghasemi (2015) indicated that perceptual behavioral control, attitudes and mental norms in respect to the electronic government services exert positive effects on the intentions to use. In addition, it was shown that there is a significant relationship between the students' computer self-efficacy of the individuals and their perceived behavioral control.

Naderi Bani, Delshad, Mohammadi and Adibzadeh (2015) also demonstrated that factors like attitudes, common beliefs regarding the information technology and mental norms have a positive and significant effect on the students' acceptance and application of technology. Evans and Le Roux (2015) in a study entitled "modeling the acceptance and use of electronic learning in Zululand University" were seeking to find a novel method to help discerning the important needs, perceptions and expectations of the electronic learning sources among the universities and the staff members of the aforesaid university. The results of their study showed that the acceptance and the use of electronic learning sources could be figured out through predicting users' behavioral intentions. The relationships between the self-efficacy and psychological health variables (Parto & Besharat, 2011), life satisfaction (Azizli, Atkinson, Baughman and Giammarco, 2015) and social support (Gao, Sun, and Chan, 2014) have been taken into consideration in the prior studies in bivariate relationships; but, the multivariate relationships analyses and the quality of the inter-variable interactions in a multi-facet study is lacking from the study literature. However, to the best of the researchers' knowledge, little attention has been paid to the investigation of internet self-efficacy role and

electronic services acceptance among the individuals.

According to the challenges introduced above, the research problem in the current research was to identify the university students' internet self-efficacy and their acceptance of electronic services among the students of Islamic Azad University, Dezful Branch. The self-efficacy variables are explained as follows:

### **The University Students' Self-Efficacy Variables**

#### **E-services**

In the present study, using e-services is a two-way channel, which can be divided into several frequencies including "never (1), less than once a week (2), once a week (3), twice or three times a week (4), four to six times a week (5), once a day (6), and more than once a day (7).

#### **Mental norm**

Mental norm includes interpersonal and social norms. Interpersonal norms refer to the Dezful university learners' attitudes toward using e-services in searching scientific sources. The items are "My family agrees with me to use the e-services." and "My friend believe that I should use the e-services." Social norms refer to the learners' attitude toward using e-services in searching scientific sources. The items are "Using e-services in searching scientific sources is a good way to achieve needed data." and "Experts believe that using e-services in searching scientific sources can be useful to me."

#### **Self-efficacy**

This refers to two issues including the subsection of Web-specific self-efficacy index and Online self-efficacy which are comprised of 11 items (i.e., from 28 to 38). Web-specific self-efficacy refers to the learners' attitude toward their self-confidence in using e-services and related web-links. Online self-efficacy refers to the learners' ideas on their self-confidence in surfing the Internet and search engines.

#### **Perceived control**

This refers to the university students' control on using the e-services intentionally or unintentionally. Thus, they should confirm their management on using e-services for searching scientific data.

#### **Perceived risk**

It refers to the use of e-services for searching scientific sources regarding the items including the learners' attitudes toward the e-service technical problems, which can make them troubles, and losing the time for doing the tasks again in case of failing the use of e-services.

#### **Perceived entertainment**

It deals with the students' attitudes toward the use of e-services for entertainment. The items ask the learners' ideas on using e-services as fun or amusement.

### Perceived usefulness

It refers to the learners' attitudes toward the uses of e-services for improvement and facility to receive scientific data.

### Intention

It refers to the learners' decision-making process that emphasizes the learners' willing in using e-services at any time they need to receive information.

### Attitude

It refers to the learners' ideas on using e-services as a good idea or a good decision. These items focus on the learners' decision on using information technology as the main source of receiving scientific sources.

The above self-efficacy variables form a model, which shows the effect on using digital information on university students' self-efficacy in searching scientific sources. Attitude of the learners could be the target of four variables including perceived usefulness, perceived entertainment, perceived risk and online self-efficacy. Other subjective variables like interpersonal and social norms can affect it too. These two variables can affect the learners' intention to use online sources. Perceived entertainment includes two variables of web-specific self-efficacy and perceived control, which affect the learners' intention in using digital sources. In general, the learners' intention to use e-services can affect their self-efficacy in searching electronic information. The relationships between the variables can be regarded as one-way or two-way since these variables can affect each other effectively. Figure 1 presents the relationships between the variables. This model could be used as a theoretical model for the role of effective variables in using e-services for scientific sources among the university students. Figure 1 shows the self-efficacy variables.

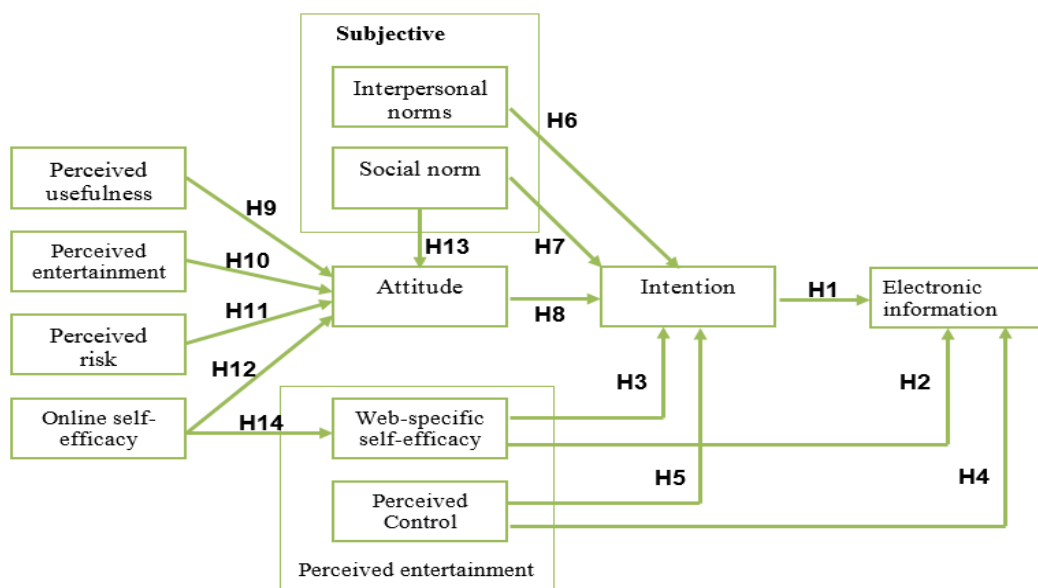


Figure 1. Theoretical Model of the Research Variables

### Methodology

The present research was a descriptive-analytical method and the correlational study type. Thus, it is enumerated as an applied research implemented in the form of a field study in terms of the objectives it was going to accomplish.

The study population included the entire university students from technical and engineering, humanities, agriculture, nursing and obstetrics and fundamental sciences departments from Islamic Azad University, Dezful Branch. The total number of study population was 13524 individuals out of whom 2055 individuals were studying at MA, 8692 individuals were BA students and 2703 individuals were students of discontinuous BA students, 17 individuals were schooling in continuous associate's degree, 40 individuals were discontinuous associate's degree students and 17 individuals were studying at PhD. 387 students were selected as the study sample volume based on Cochran's formula and according to the fact that 387 individuals participated in the study as the sample volume, 450 questionnaires administered to them. 63 out of 450 distributed questionnaires were defective and therefore discarded. In the study, 196 individuals were males and 191 individuals were females. The instrument of collecting data was a questionnaire incorporating the inventory of usefulness, intention to use, behavioral intention and the frequency of making use of electronic services. It was excerpted from a study conducted by Davis' (1989) questionnaire that contained 10 items. The inventory of interpersonal and social norms was taken from a study that was carried out by Bhattacharjee (2000) containing 8 items, perceived risk scale excerpted from a study undertaken by Pavlou (2001) containing 3 items.

The scale of perceived control excerpted from Igarria and Livari(1995) containing 4 items, the scale of perceived control excerpted from the study performed by Armitage, Armitage, Conner, Loach, and Willetts (1999) that contained three items and the scale of web-specific self-efficacy and general internet self-efficacy based on the study conducted by Torkzadeh and Van Dyke (2001). They included 5 and 6 items respectively. The responses to the questionnaire were based on 7-point Likert scale ranging from "1=completely disagree" to "7=completely agree". The experts were asked for their ideas and notions for the determination of the content validity of the questionnaires and the final questionnaire was prepared after revisions of the weak items through revising or removing the items. Cronbach's Alpha was measured to assess the reliability of the questionnaires and confirmatory factorial analysis was applied to determine the construct validity of the questionnaires.

Data were collected and analyzed based on two methods by means of SPSS software, version 18. Firstly, the descriptive statistics (frequency, means and standard deviation tables) was calculated used to acquire a precise description of the study population. Kolmogorov-Smirnov test was used to examine the data normality and Smart PLS software was applied to explore the study conceptual model. PLS analysis was applied as a structural equation method based on a group of independent variables influencing a collection of dependent variables. PLS method as a regression model was utilized to predict one or several dependent variables by means of one or several independent indicators. This method can be considered as a path model for the interpretation of the effects that independent variables exert on the dependent variables. Since the variables were correlated and the result could be the purpose of the present research, their interrelationships were complicated, covariance-based approaches (LISREL and Amos) would not deliver authentic results. Thus, PLS does not seem to have complexity problems and it is capable of encompassing a great many of the variables in the

model. Finally, PLS is not sensitive to the sample size and the estimation method of this approach can be applied for both very small and very large sample sizes. Another advantage of PLS used by the current research paper is its ability to model the multiple dependent variables based upon multiple independent variables. Moreover, the entire statistical tests were surveyed in a  $p \leq 0.05$  significance level.

### Results

The research population in the present study was 387 individuals who participated in the study. They were males (50.65%) and were females (49.35%). The respondents' educational level was as stated in the following sentences: 69% were BA students, 29% were MA students and 2% were PhD students. They were from various study fields including the followings: 13% were studying in technical and engineering department, 22% were schooling in humanities, 28% in agriculture, 19% in nursing and obstetrics and 17% were educating in fundamental sciences departments.

The descriptive statistics of the study variables in terms of the statistical indices are presented in Table 1.

Table 1

*Descriptive statistics of the variables in terms of statistical indicators*

Variable	Abbrev.	No.	Min.	Max.	Mean	Std. error	SD	Variance
Intention	INT	387	1	7	5.1869	0.06896	1.35659	1.840
Attitude	AT	387	1	7	5.1137	0.07695	1.51380	2.292
Interpersonal norms	IN	387	1	7	5.1764	0.06812	1.34005	1.796
Social norm	SN	387	1.5	7	4.4910	0.04643	0.91330	0.834
Perceived usefulness	PU	387	1	7	4.9948	0.06076	1.19536	1.429
Perceived risk	PR	387	2	7	4.6021	0.05497	1.08138	1.169
Perceived entertainment	PE	387	1.25	7	5.4774	0.04871	0.95815	0.918
Perceived control	PC	387	2.33	7	4.6658	0.05298	1.04215	1.086
Web-specific self-efficacy	SSE	387	1.80	7	4.9664	0.06327	1.24476	1.549
Online self-efficacy	OS	387	1	7	4.7132	0.07124	1.40138	1.964

Table 1 shows that “perceived entertainment” is the highest mean values  $5.4774 \pm 0.95815$ , while the lowest mean value is,  $4.4910 \pm 0.91330$  which belongs to the “social norm”. To determine the credibility of the model's latent factors of the variables including the participants perceptions as dependent variables, the internal consistency credibility index (Cronbach Alpha) and the combined validity index is computed. Table 2 shows the Cronbach Alpha coefficients as well as the combined validity index for the study latent factors in Table 2.

Table 2

*Cronbach Alpha scale and combined reliability of the study latent variables*

Latent variables	Abb.	Cronbach's alpha coefficient (Alpha>0.7)	Combined reliability coefficient (CR>0.7)	Average variance extracted (AVE>0.5)	Communality
Intention	INT	0.937	0.960	0.888	0.888
Attitude	AT	0.859	0.874	0.925	0.925
Interpersonal norm	IN	0.747	0.762	0.863	0.863
Social norm	SN	0.858	0.889	0.671	0.671
Perceived usefulness	PU	0.871	0.920	0.793	0.793
Perceived entertainment	PE	0.886	0.921	0.746	0.746
Perceived risk	PR	0.828	0.887	0.724	0.724
Online self-efficacy	OS	0.938	0.951	0.765	0.765
Perceived control	PC	0.791	0.866	0.683	0.683
Web-specific self-efficacy	SSE	0.917	0.938	0.753	0.753
Taking electronic services	TES	1.000	1.000	1.000	1.000

Table 2 indicates that the proper value for the Cronbach Alpha coefficient and combined reliability is 0.7. These scales were found having appropriate values for the latent variables so the study enjoys a good status in terms of the reliability. As it is known, the proper value for AVE is 0.5 and corresponding to the findings demonstrated in Table 2, this scale is indicative of an appropriate value regarding the latent variables, thus the convergent reliability is confirmed. As it was mentioned,  $R^2$  coefficients pertaining to the endogenous (dependent) latent variables were applied to measure the structural model's goodness of fit.

Table 3

*R<sup>2</sup> scale for endogenous construct*

Latent variables	Abbreviations	R <sup>2</sup>
Attitude	AT	0.346
Intention	INT	0.480
Specific web self-efficacy	SSE	0.451
Taking electronic services	TES	0.035

Table 3 shows that  $R^2$  has been calculated for the study endogenous constructs and it is clearly seen that the structural model's goodness of fit is confirmed in reference to the three criteria.

### Overall Model Fit Goodness of Fit (GOF)

To survey the overall model goodness of fit, GOF is used as a scale and three values, 0.01, 0.25 and 0.36, were introduced as weak, medium and strong values, respectively for GOF in the current research paper. This criterion was devised based on the university attitudes scores at the three levels which were obtained via the frequency of responses to the questionnaire

including the latent variables.

Table 4

*Overall model goodness of fit results*

Communality	R <sup>2</sup>	GOF
0.801	0.325	0.512

According to the value, 0.512, obtained for GOF, the overall model high goodness of fit is confirmed. The index does not evaluate the subjective model goodness of fit by means of the gathered data like the Chi-square-based indices in LISREL models; rather, it is capable of predicting the overall studied model and it also shows whether the tested model has been successful in predicting the endogenous latent variables or not.

Table 5

*Direct relationship and the significance coefficients of the study model assumptions*

Assumptions	Inter-variable Causal relationships	Abbrev.	Path coefficient ( $\beta$ )	Significance (T-value)	Test result
Hypothesis ONE	Intention to use-taking electronic services	INT-TES	0.182	2.542	Confirmed
Hypothesis Two	Web specific self-efficacy-taking electronic services	SSE-TES	0.033	0.650	Rejected
Hypothesis Three	Specific web self-efficacy-intention to use	SSE-INT	0.285	4.884	Confirmed
Hypothesis Four	Perceived control-taking electronic services	PC-TES	0.142	2.258	Confirmed
Hypothesis Five	Perceived control-intention to use	PC-INT	0.139	2.596	Confirmed
Hypothesis Six	Interpersonal norms-intention to use	IN-INT	0.376	5.506	Confirmed
Hypothesis Seven	Social norm-Intention to use	SN-INT	-0.061	0.975	Rejected
Hypothesis Eight	Attitude=Intention to use	AT-INT	0.169	2.305	Confirmed
Hypothesis Nine	Perceived usefulness-Attitude	PU-AT	0.224	4.148	Confirmed
Hypothesis Ten	Perceived Entertainment-Attitude	PE-AT	0.335	5.702	Confirmed
Hypothesis Eleven	Perceived Risk-attitude	PR-AT	0.187	3.640	Confirmed
Hypothesis Twelve	Online self-efficacy-attitude	OS-AT	0.079	1.510	Rejected
Hypothesis	Social Norm-	SN-AT	-0.026	0.420	Rejected



Assumptions	Inter-variable Causal relationships	Abbrev.	Path coefficient ( $\beta$ )	Significance (T-value)	Test result
Thirteen	Attitude				
Hypothesis Fourteen	Online self-efficacy-Specific Web self-efficacy	OS-SSE	0.672	16.475	Confirmed

### Discussion and conclusion

#### **H<sub>1</sub>: Behavioral intention to make use of electronic services positively influences using the electronic information among Dezful Islamic Azad University students.**

According to the standardized coefficient (path coefficient) between the two variables (behavioral intention and electronic services application) being obtained  $\beta=0.182$  and the inter-variable significance coefficient was found higher than the modulus 0.96 ( $t=0.542$ ), thus it can be said that the relationship is statistically significant. Thus, H<sub>1</sub> was confirmed and it can be concluded that there was a significant relationship between the students' intention to use and their acceptance of electronic services and the first hypothesis is subsequently confirmed. This finding is in line with Haghparast, Hedayatinia, Khosravi and Ghanyan (2014) who showed that behavioral intention has the greatest effect on making real use of technology and it explains 48% of the variations. In the present study, the type of the behavior that is not readily exercisable is the users who apply the digital services; therefore, behavioral intention can influence the use of services but it is not so high in its value and percentage.

#### **H<sub>2</sub>: Specific Web Self-efficacy has a positive effect on the students' use of the electronic information in Dezful Islamic Azad University.**

According to the standardized path coefficient between the two variables of specific web self-efficacy and electronic services, the index was  $\beta=0.033$ , and also the inter-variable significance coefficient was found higher than a modulus value of 1.96 ( $t=0.650$ ). This is shown that the relationship is not significant. Therefore, H<sub>2</sub> assumption was rejected and it can be concluded that web specific self-efficacy did not exert a positive effect on the students' use of electronic services by Dezful Islamic Azad University, so the second hypothesis was rejected.

The results of the present study based on a significance level of  $t\text{-value}=0.650$  demonstrated that web specific self-efficacy does not positively influence the students to use the electronic services in Dezful Islamic Azad University.

#### **H<sub>3</sub>: Specific Web self-efficacy has a positive effect on the students' behavioral intention to use the electronic information in Dezful Islamic Azad University.**

According to the idea that the standardized coefficient (path coefficient) between the two variables (specific web self-efficacy and intention to use) was found  $\beta=0.285$  and the inter-variable significance coefficient ( $t\text{-value}$ ) was also computed  $t=4.884$  (more than a modulus value of 1.96), it can be observed that the foresaid relationship is not significant. Therefore, H<sub>3</sub> assumption was confirmed and thus it can be concluded that specific web self-efficacy has a positive influence on the students' intention to use electronic services in Dezful Islamic Azad University. Thus, the third hypothesis was confirmed.

In terms of the self-efficacy effect on the intention to make use of electronic services, the current study conforms to the other studies performed by several researchers (e.g., Zamani, Bibi, Mohammadi & Babri, 2012; Haghighinasab, et al. 2015; Evans & Le Roux, 2015).

**H<sub>4</sub>: perceived control in respect to the use of electronic services has a positive effect on the students' use of the electronic information in Dezful Islamic Azad University.**

According to the idea that the standardized coefficient (path coefficient) between the two variables (perceived control and the use of electronic services) was found  $\beta=0.142$  and the inter-variable significance coefficient (t-statistic) was  $t=2.258$  (larger than a modulus of 1.96), it is seen that the relationship is significant. Therefore,  $H_0$  assumption is rejected and  $H_4$  was confirmed so it can be concluded that the perceived control in respect to the use of electronic services has a positive effect on the students' use of electronic services in Dezful Islamic Azad University. Thus, the fourth hypothesis is confirmed.

**H<sub>5</sub>: perceived control in respect to the use of electronic services has a positive effect on the students' intention to use the electronic information by Dezful Islamic Azad University.**

According to the standardized coefficient (path coefficient) between the two variables (perceived control and intention to use) being found  $\beta=0.139$  and the inter-variable significant coefficient (t-statistic) was  $t=2.596$  is greater than a modulus value of 1.96. It is demonstrated that the relationship is statistically significant so the  $H_5$  assumption was confirmed and it can be concluded that the perceived control in respect to the use of electronic services has a positive effect on the students' intention to use electronic services in Dezful Islamic Azad University because of which the fifth hypothesis is confirmed.

The current research paper conforms to the studies conducted by Haghighinasab et al (2015). The results demonstrated that perceptual-behavioral control over the electronic government services had a positive effect on the intention to use electronic services. In comparing these two latter findings, the internal control center was accompanied by an increase in satisfaction, acquiring larger gains, the ability to influence the other features, greater success, exerting higher rate of control over the peripheral environment and higher scores at work and positive response to the encouragers (Gist, Schwoerer & Rosen, 1989).

**H<sub>6</sub>: interpersonal norm pertaining to the electronic services has a positive effect on the students' intention to use the electronic information in Dezful Islamic Azad University.**

Also, based on the standardized coefficient (path coefficient) between the two variables (interpersonal norms and intention to use) being found equal to  $\beta=0.376$  and according to the significance coefficient (t-statistic) found equal to  $t=5.506$  (larger than a modulus value of 1.96), it is shown that the relationship is statistically significant, so  $H_6$  assumption is confirmed. In addition, it can be concluded that interpersonal norm pertaining to the use of electronic services has a positive effect on the students' intention to use in Dezful Islamic Azad University students and the sixth hypothesis was confirmed accordingly.

The results confirmed that the sixth hypothesis and interpersonal norms pertaining to the electronic services account for 37% of the intention to use electronic services.

**H<sub>7</sub>: social norm pertaining to the electronic services has a positive effect on the students' intention to use the electronic information in Dezful Islamic Azad University.**

Standardized coefficient (path coefficient) between the two variables (social norm and intention to use) was found  $\beta = -0.061$  and the significance coefficient (t-statistic) between the two variables was  $t = 0.975$  (smaller than a modulus value of 1.96) so it is shown that the relationship is not significant, therefore H<sub>7</sub> is rejected and it can be concluded that social norm pertaining to the electronic services does not have a positive effect on the students' intention to use electronic services in Dezful Islamic Azad University and the seventh hypothesis was consequently rejected.

In the past decades, some of the studies have suggested that the mental norm scales should take two normative effects into consideration. Mental norm refers to the “perceived social pressure for doing or leaving undone a behavior” (Ajzen, 1991). Based on the innovation diffusion theory (IDT), users tend to develop their relationships with their concerned others to be able to appraise their interpretations of their IT adoption. Such increased interactions with the social network might influence their decision to adopt (Maddux & Rogers, 1983).

**H<sub>8</sub>: Attitude towards the use of electronic services has a positive effect on the students' intention to use the electronic information in Dezful Islamic Azad University.**

According to the standardized coefficient (path coefficient) between the two variables (attitude and intention to use) being found  $\beta = 0.196$  and that the significance coefficient (t-statistic) between the two variables was  $t = 2.305$  (larger than a modulus of 1.96) it is shown that the relationship is statistically significant. Therefore, H<sub>8</sub> assumption is confirmed so it can be concluded that attitude towards the use of electronic services has a positive influence on the intention to use electronic services in Dezful Islamic Azad University students and the eighth hypothesis was confirmed subsequently.

Prior studies offer evidences regarding this latter concept implying that the attitudes have a considerable effect on intentions within the format of excerpting and applying information technology (Agarwal & Prasad, 1999; Chau & Hu, 2001). Attitude explains about 23% of the variance in the intention to use electronic services offered by electronic underwriting. Thus, it is worth mentioning that the current research paper is consistent with the previous studies, elaborates 17% of the variations; in other words, 17% of the variations in intention to use electronic services can be elucidated by the attitude towards the use of electronic services.

**H<sub>9</sub>: perceived usefulness of the electronic services has a positive effect on the students' attitude towards using the electronic information in Dezful Islamic Azad University.**

According to the standardized coefficient (path coefficient) between the two variables (perceived usefulness and attitude) was found  $\beta = 0.224$  and significance coefficient (t-statistic) was  $t = 4.148$  (larger than a modulus value of 1.96) it can be shown that the relationship is statistically significant. Therefore, H<sub>9</sub> assumption is was confirmed and it can be concluded that perceived usefulness of the electronic services had a positive effect on the attitude towards the use of students' electronic services in Dezful Islamic Azad University and thus the ninth hypothesis was affirmed.

The results of the current research paper, meanwhile confirming that perceived usefulness of the electronic services has a significant influence on the attitude towards the use of such services, showed that perceived usefulness of the electronic services elaborates 22.4% of the

attitudes towards the use of electronic services.

**H<sub>10</sub>: perceived entertainment of the electronic services has a positive influence on the students' attitudes towards making use of the electronic information in Dezful Islamic Azad University.**

According to the point that the standardized coefficient (path coefficient) between the two variables (perceived entertainment and attitude) was found  $\beta=0.335$  and the significance coefficient (t-statistic) between the two variables was  $t=5.702$  (larger than a modulus value of 1.96) it is observed that the relationship is significant. Thus, H<sub>10</sub> assumption is confirmed and it can be concluded that perceived entertainment had a positive effect on the attitudes towards the use of electronic services in Dezful Islamic Azad University. Thus, the tenth hypothesis was confirmed.

The results confirmed the tenth hypothesis and perceived entertainment of the electronic services accounts for 33.5% of the attitudes towards the use of the electronic services.

**H<sub>11</sub>: Perceived risk of the electronic services has a positive effect on the students' use of electronic information in Dezful Islamic Azad University.**

According to the standardized coefficient (path coefficient) between the two variables (perceived risk and attitude) being found equal to  $\beta=0.187$  and that the significance coefficient (t-statistic) between the two variables was  $t=3.640$  (larger than a modulus value of 1.96) it is shown that the relationship is statistically significant and thus the H<sub>1</sub> assumption was confirmed. Thus, it can be concluded that perceived risk of the electronic services has a positive effect on the attitudes towards the students' use of electronic services in Dezful Islamic Azad University and thus this eleventh hypothesis was confirmed.

The results obtained from the current research paper demonstrated that perceived usefulness, perceived entertainment and perceived risk are all effective on the attitude towards the use of electronic services. The results are consistent with other studies (e.g. Khedmatgozar, Hanafizadeh & Kyanpour, 2000; Montazeri, Mirza'ee, Pasandipur & Kharazmi, 2014; Wang, Jackson, Wang & Gaskin, 2015).

**H<sub>12</sub>: general internet self-efficacy has a positive effect on the attitude towards the use of electronic information in Dezful Islamic Azad University students.**

Although the standardized coefficient (path coefficient) between the two variables (general internet self-efficacy and attitude) was found  $\beta=0.079$  and that the significance coefficient (t-statistic) between the two variables was  $t=1.510$  (lower than a modulus value of 1.96). Therefore, the relationship is not statistically significant, thus the H<sub>12</sub> assumption was rejected and it can be concluded that the general internet self-efficacy does not have a positive effect on the attitudes toward using electronic services in Dezful Islamic Azad University. Thus, the twelfth hypothesis was rejected.

**H<sub>13</sub>: social norm pertaining to the electronic services has a positive effect on the students' attitudes towards the use of electronic information in Dezful Islamic Azad University.**

According to the idea that the standardized coefficient (path coefficient) between the two variables (social norm and attitude) was found  $\beta=-0.026$  and the significant coefficient (t-

statistic) between the two variables was  $t=0.420$  (smaller than a modulus value of 1.96) it is demonstrated that the relationship is not statistically significant. So the  $H_{13}$  assumption was rejected and it can be concluded that the social norm pertaining to electronic services does not have a positive effect on the students' attitudes towards the use of electronic services in Dezful Islamic Azad University. Thus, the thirteenth hypothesis was rejected.

Studies on the internet services show that the attitudes towards the use of these services in social networks are expanding and they are subject to social norms pertaining to such services (Pedersen, 2005). Moreover, self-efficacy ideas are connected to the attitudes towards a certain behavior. The students' attitude towards a certain behavior is reflective of the behavioral feedback of the favorable or unfavorable emotions displayed by an individual. The results obtained in the present study conform to the ones obtained in a study undertaken by Zaki (2010) in terms of the finding that general internet self-efficacy was not significantly correlated with the attitude towards the use of electronic services.

**$H_{14}$ : general internet self-efficacy has a positive effect on the students' use of the specific web self-efficacy in Dezful Islamic Azad University.**

The standardized coefficients (i.e., path coefficient) between the two variables (i.e., general internet self-efficacy and specific web self-efficacy) was found at  $\beta=0.672$ . Moreover, the significance coefficient (t-statistic) between the two variables was  $t=16.475$  (i.e., larger than a modulus value of 1.96). It is demonstrated that the relationship is statistically significant, so  $H_1$  hypothesis is confirmed and it can be concluded that general internet self-efficacy had a positive effect on the use of the students' specific web self-efficacy in Dezful Islamic Azad University. Thus, the fourteenth hypothesis was confirmed.

In terms of the general internet self-efficacy effects on the web-specific self-efficacy, the results of the current research paper are consistent with the results obtained in other studies carried out by Ma and Liu (2005), Torkzadeh and Van Dyke (2001), Zaki (2010), Zamani, et al (2012). Bandura (1997) pointed out that although self-efficacy ideas pertaining to certain areas are special and particular the perceived self-efficacy is inclined towards the exchange of two activities within the framework of an identical area based on the extent to which qualitative characteristics of the two actions and skill-related traits through which they are delivered are deemed similar. It can be concluded that the individuals who have a high level of general internet self-efficacy enjoy using web-surfing. Thus, 67% of the changes in web-specific self-efficacy can be predicted via the individuals' abilities of being self-efficient in terms of making use of internet in general.

In sum, the findings of the study showed that the learners' attitudes toward the use of e-services in searching scientific sources were positive and all the hypotheses were accepted except the hypotheses 2, 7, 12 and 13 which assessed the Web specific self-efficacy-taking electronic services, Social norm-Intention to use, Online self-efficacy-attitude, Social Norm-Attitude. The results showed that the university students at Islamic Azad University of Dezful believed that the use of e-services could facilitate searching web sites and achieving the scientific sources effectively. They also believe that their self-efficacy can be improved if the use technology to search the Internet search engines for doing their academic tasks. The model of learners' attitudes can be at the elementary stage and it may be further investigated to provide the researchers with a more comprehensive model for presenting the effective variables which affect the learners' self-efficacy and acceptance of using electronic

information services at the university level.

### Suggestions for further research

The results of the current survey can be accompanied with accomplishments such as improvement in the complementary education applicants' use of information and communication technologies existent in the universities. Therefore, due to the financial resources constraints, the necessary priority should be done regarding the relative importance of the abovementioned factors in terms of their expenditures in order for the electronic services to be successfully offered and used. However, there is a need to conduct future researches on the use of technology in the Middle East countries concerned with library search engines at the universities.

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